

CLAIMS

I claim:

1.

A blade attachment for an off-road vehicle having a forward end, a rearward end,
a right side, a left side, and an underside, comprising in combination:

a mounting frame having rearward and forward ends;

said rearward end of said mounting frame being pivotally connected, about a horizontal
axis, to said vehicle and extending forwardly therefrom so that its said forward
end is positioned forwardly of said forward end of said vehicle;

said forward end of said mounting frame being selectively movable between raised and
lowered positions;

a blade having a right end and a left end, selectively pivotally secured about a vertical
axis to said forward end of said mounting frame;

an electrically driven motor operatively mounted on said mounting frame;

said electrically driven motor being operatively connected to said blade so as to
selectively pivotally move said blade between selected angular positions with
respect to said mounting frame and the vehicle.

2.

The combination of claim 1 wherein said motor is powered by the vehicle
electrical system.

3.

1 The combination of claim 1 wherein a locking mechanism selectively locks said blade in said selected angular positions.

4.

5 The combination of claim 3 wherein said locking mechanism is in an unlocked position when said forward end of said mounting frame and said blade has been raised to a predetermined height with respect to the vehicle.

5.

10 The combination of claim 4 wherein said locking mechanism is in a locked position when said forward end of said mounting frame and said blade has been lowered to a predetermined height.

6.

15 The combination of claim 1 wherein said motor is operatively connected to said blade by a clutch.

7.

The combination of claim 6 wherein said clutch comprises a slip clutch.

8.

20 The combination of claim 1 wherein said motor is a fractional horsepower motor.

9.

25 The combination of claim 5 wherein said locking mechanism includes a pivotal blade position lever, movable between locked and unlocked positions, a latching spring connected to said lever which yieldably urges said lever towards its said locked position,

1 and an unlatching spring connected to said lever which yieldably urges said lever
towards its said unlocked position.

10.

5 The combination of claim 9 wherein said latching spring has a spring strength
greater than said unlatching spring.

11.

10 The combination of claim 9 wherein said latching spring is elongated and has first
and second ends, said first end of said latching spring being connected to the forward
end of the vehicle, said second end of said latching spring being connected to said
lever, said latching spring overcoming said unlatching spring when said blade is at a
predetermined height and lower, with respect to the forward end of the vehicle to urge
said lever towards its said locked position, said unlatching spring overcoming said
latching spring when said blade is at a predetermined height and above, with respect to
15 the forward end of the vehicle to move said lever to its said unlocked position so that
said motor may pivotally move said blade to one of its selected angular positions.

12.

20 The combination of claim 11 wherein said first end of said latching spring is
selectively vertically adjustably connected to the forward end of the vehicle.

13.

25 The combination of claim 11 wherein an adjustable strap connects said first end
of said support plate to the vehicle.

14.

1 The combination of claim 1 wherein said vehicle is an all-terrain vehicle.

15.

5 A blade attachment for an off-road vehicle having a forward end, a rearward end,
a right side, a left side, and an underside, comprising in combination:

a mounting frame having rearward and forward ends;

said rearward end of said mounting frame being pivotally connected, about a horizontal
axis, to said vehicle and extending forwardly therefrom so that its said forward
end is positioned forwardly of said forward end of said vehicle;

10 said forward end of said mounting frame being selectively movable between raised and
lowered positions;

a first plate means secured to said forward end of said mounting frame;

15 a hinge plate selectively movably positioned on said first plate about a vertical axis and
having a forward end and a rearward end;

said hinge plate having a blade position lever opening formed therein;

said hinge plate having a plurality of spaced-apart notches formed in its said rearward
end;

20 a blade secured to said hinge plate;

a blade position lever operatively pivotally movably mounted on said hinge plate which
extends downwardly therefrom through one of said notches and through said
blade position lever opening;

1 said blade position lever being selectively movable between locked and unlocked
positions;

said blade position lever normally being in its said locked position;

and an electrically driven motor operatively mounted on said mounting frame;

5 said motor being operatively connected to said hinge plate for moving said hinge plate
and said blade to various angular positions with respect to said mounting frame
and the vehicle when said blade position lever is in its said unlocked position.

16.

10 The combination of claim 15 wherein the motor has a drive pulley associated
therewith; a cable wound upon said drive pulley and having first and second ends; said
first and second ends of said cable being operatively secured to said hinge plate.

17.

15 The combination of claim 16 wherein said cable is wound upon said drive pulley
in such a fashion to permit said cable to slip upon said drive pulley should said hinge
plate and blade be physically moved without said motor being actuated.

18.

20 The combination of claim 17 wherein said first and second ends are secured to a
driven plate which is positioned between said hinge plate and said first plate; said driven
plate being operatively attached to said hinge plate for movement therewith.

19.

25 The combination of claim 18 wherein said first and second ends of said cable are
resiliently connected together.

20.

1 The combination of claim 15 wherein said motor is powered by the vehicle electrical system.

21.

5 The combination of claim 15 wherein said blade position lever is in an unlocked position when said forward end of said mounting frame and said blade are positioned at a first predetermined height with respect to the vehicle.

22.

10 The combination of claim 21 wherein said locking mechanism is in a locked position when said forward end of said mounting frame and said blade are positioned below said first predetermined height.

23.

15 The combination of claim 15 wherein said motor is a fractional horsepower motor.

24.

20 The combination of claim 22 wherein a latching spring is connected to said blade position lever which yieldably urges said blade position lever towards its said locking pin, and wherein an unlatching spring is connected to said blade position lever which yieldably urges said blade position lever towards its said unlocked position.

25.

25 The combination of claim 24 wherein said latching spring has a spring strength greater than said unlatching spring.

26.

1 The combination of claim 24 wherein said latching spring is elongated and has
first and second ends, said first end of said latching spring being connected to the
forward end of the vehicle, said second end of said latching spring being connected to
5 said blade position lever, said latching spring overcoming said unlatching spring when
said blade is at a predetermined height, and lower, with respect to the forward end of
the vehicle to urge said blade position lever towards its said locked position, said
unlatching spring overcoming said latching spring when said blade is at a
predetermined height, and above, with respect to the forward end of the vehicle to move
10 said blade position lever to its said unlocked position so that said motor may pivotally
move said blade to one of its selected angular positions.

27.

15 The combination of claim 26 wherein said first end of said latching spring is
selectively vertically adjustably connected to the forward end of the vehicle.

28.

The combination of claim 26 wherein an adjustable strap connects said first end
of said support plate to the vehicle.

29.

20 The combination of claim 15 wherein said motor is selectively adjustably
connected to said mounting frame.

30.

1 The combination of claim 15 wherein said motor is selectively adjustably
connected to said hinge plate.

31.

5 The combination of claim 15 wherein said vehicle is an all-terrain vehicle.

32.

 The combination of claim 15 wherein said vehicle is a single passenger vehicle.

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